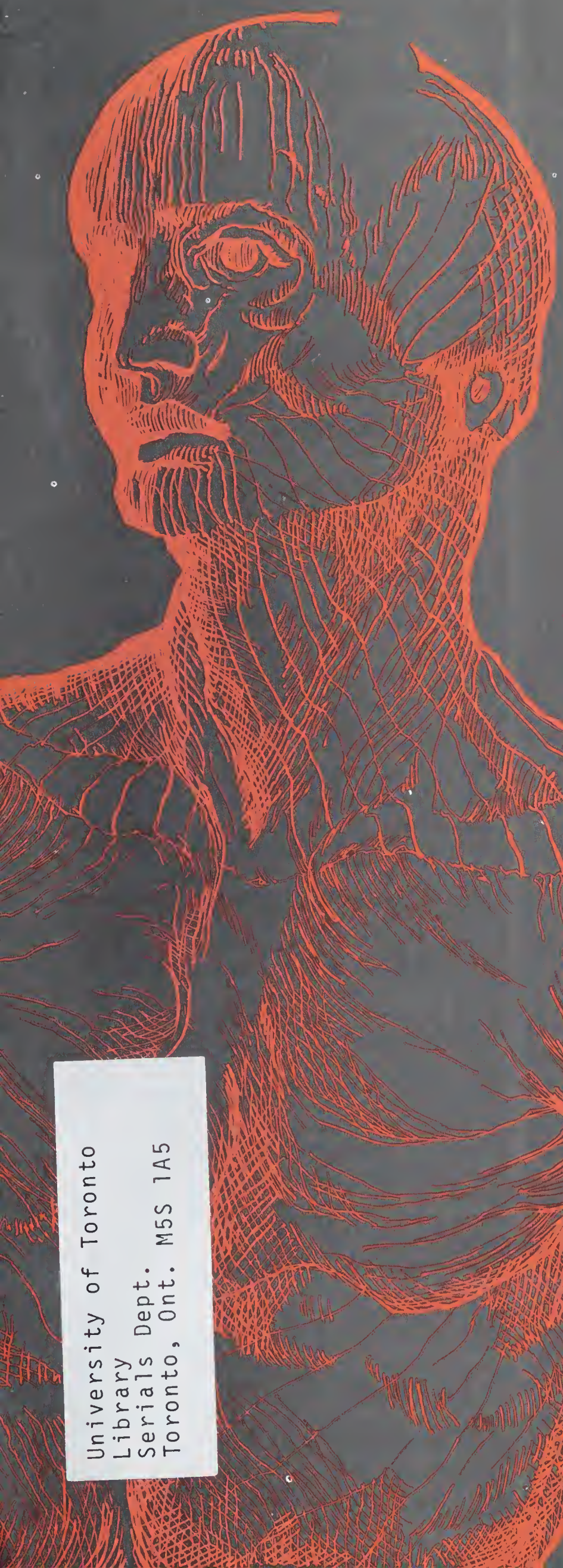
MEDICAL JOURNAL

University of Toronto



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1) All articles intended for publication should be submitted to the editors before the deadline which is usually *six* weeks before the release of the Journal.
2) Submitted articles should be typed (or legibly printed) double-spaced; single-sided on paper 8½" x 11" (letter size) and they should not be more than 15 to 20 pages (3000 to 4000 words).
3) Illustrations, graphs, diagrams and figures should be put on a separate sheet and identified by Arabic numerals. A list of explanatory legends for all the figures and diagrams should be put on another sheet. Do not write on the back of photographs.
4) References should be checked with the original sources, designated by Arabic numerals in the text, numbered in order of appearance and put on a separate sheet. Each periodical reference should include in order: the author's name and initials, title of the article, Journal name, volume number, page number and year. (eg., 1. Rosen HJ: Lumbar invertebral disc surgery: review of 300 cases. *Can. Med Assoc J., 101: 317, 1969.*)
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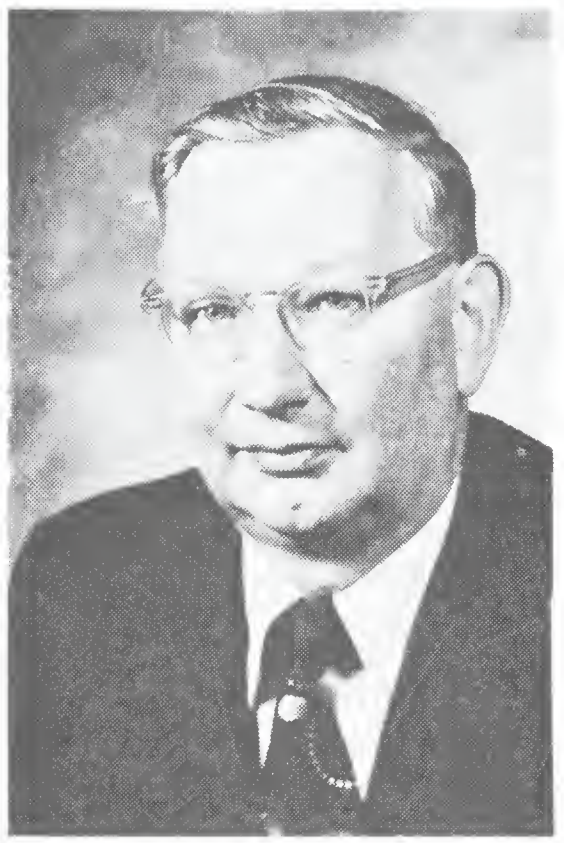
Guest Editorial



On November 3, 1977, Dr. Henry G. Friesen, professor and Head of the Department of Physiology at The University of Manitoba Faculty of Medicine, was awarded $10,000 in recognition of his contributions to the biochemistry, physiology, and pathophysiology of lactogenic hormones, and in particular, for the identification of human prolactin. Dr. Friesen was one of five winners of this year's Gairdner International Awards, for which more than 100 nominees were considerd. The Gairdner Foundation, since its establishment in 1957 by the late Toronto stockbroker James A. Gairdner, has awarded more than 125 individuals for their outstanding contributions to medical science. The Journal is pleased and honoured to present Dr. Friesen as this issue's guest editorialist.

It is indeed an honour to be asked to write an editorial for an issue of the journal devoted to endocrinology. My interest in endocrine research began during my days as a medical student. Professor Joseph Doupe had introduced an experimental program in second year medicine at the University of Manitoba in which each student spent a period of twelve weeks on a research project. This exercise Professor Doupe judged to be much more valuable than the passive participation in class laboratory experiments or demonstrations which were much in vogue at the time. My research project involved an examination of endocrine influences on acetylation of sulfanilamide by liver slices. Near the end of the twelve weeks I finally carried out proper control experiments and to my chagrin discovered that the sulfanilamide preparation which I was using was already partially acetylated. The only conclusion possible was that all experiments would have to be repeated! The major lesson learned was the importance of adequate controls in research. Of course, I learned much more.

It is not simply a sense of nostalgia that motivates me to say that it is regrettable that the "modern" curricula of most medical faculties today afford students little opportunity and even less incentive to become involved in the frustrations and challenges as well as the excitement and exhilaration of medical research. The pressures to accede to the utilitarian view of medical education are many but they must be recognized and firmly resisted. To fail to do so will in the long run result in fewer medical discoveries and less progress, to the detriment of the patients we hope to serve.

My work on human prolactin in a small way supports this contention. Prior to 1970 the existence of human prolactin was doubted by most endocrinologists. Subsequent to its identification and isolation in my laboratory specific and sensitive radioimmunoassays were used to measure circulating concentrations of human prolactin in health and disease. As a result an explosion in our knowledge of the physiology and pathophysiology of prolactin secretion has occurred. Some of the basic facts regarding serum prolactin levels at different stages of life are now known and many of the drugs which influence prolactin secretion have been identified. The critical importance of prolactin in lactation has been documented. The early recognition of pituitary prolactin secreting tumours has been made possible. The major etiological role of hyperprolactinemia in perhaps 10-20% of patients with secondary amenorrhea is now acknowledged. Hyperprolactinemia as the cause of hypergonadism and impotence is now recognized. Finally, the importance of dopaminergic mechanisms in inhibiting the prolactin secretion has been translated into therapeutic agents which can successfully control hyperprolactinemia and rapidly reverse the deleterious effects caused by elevated prolactin levels. As a result menses resume and fertility is restored.

It is with a sense of astonishment that I look back over less than a decade and see the remarkable progress that has been made in our understanding of prolactin in health and disease. I feel a certain sense of satisfaction that several human maladies are now better understood and are more amenable to therapy as the result of the research on prolactin; and I can't help but wonder whether I would have missed this exciting medical adventure had I been exposed to the "modern" medical curriculm with its emphasis on "terminal objectives, primary care, and front line medicine." But then, as Archibald MacLeish has so aptly put it., "The answers, the answers we know. The questions we know not how to ask." □

Henry G. Friesen, M.D.

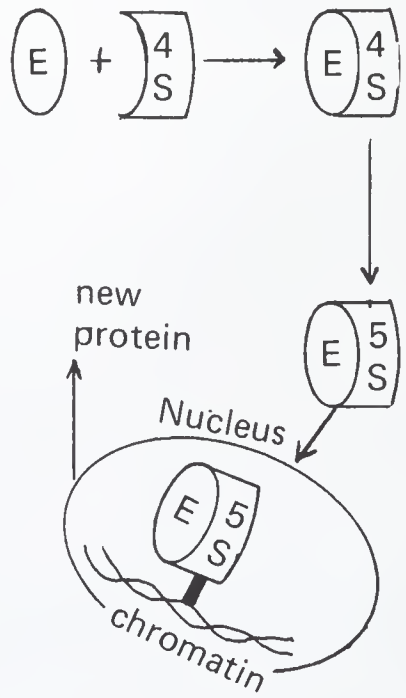
Mechanisms of Steroid Hormone Interaction with Chromatin in Chick Oviduct Cells

Kenneth Zatzman

A key area of endocrinological research today lies in the clarification of events surrounding the interaction of steroid hormones such as estradiol with chromatin in the nucleus of a uterine target cell. Studies to determine the possible models involved have reached indefinite conclusions. This report will examine the current therories of steroid hormone-chromatin interaction and discuss some evidence put forth to support or refute them.

First, the overall simplistic model for steroid hormone action on any target cell should be appreciated. As shown in Fig. I, this basically consists of a process whereby a lipid-soluble steroid hormone gains entrance to a target cell by means of a so-called passive(non energy-requiring) process, following which various complexes are formed. Once the steroid hormone, say an estrogen like estradiol, enters the cell, it is thought that it combines in the cytoplasm with a suitable receptor, the latter sedimenting at 4S. The hormone-4S receptor complex so formed is heat-labile, and upon exposure to 37°C, will alter its conformation to become a hormone-5S receptor complex. This latter complex will bind to chromatin whereas the 4S complex will not. The hormone-5S receptor complex[**HR complex**] enters the nucleus and, presumably, binds to an acceptor site on a protein within the metabolically active chromatin. Initiation of transcription of new messenger RNA[**mRNA**] soon begins; new so-called "induced protein" can later be detected in the cytoplasm.

However, the nuclear events as outlined above leave open several possibilities regarding the nature of the binding of the HR complex to chromatin. It has not really been established yet what is going on at the chromatin level, though at least three hypothetical models have been proposed(Fig. II A-D).



General Model of Steroid Hormone Interaction with a Target Cell

One of the more elementary models proposed(See Fig.II A) is that the HR complex can choose one of several binding sites(thought to be composed of non-histone protein) on the chromatin, and, depending on the choice, a different response is elicited.* Such a response could include stimulation of new mRNA production, for example, leading to formation of particular proteins.

However, in order to fit more in line with certain experimental data to be later discussed, certain changes have been suggested to this model [1] which suppose that the HR complex binds initially to a so-called 'regulatory site"(the site indicated **1,2, or 3** on Fig. IIB) and then, the HR complex translocates to a so-called structural site **1*** or **2*** somewhere near the regulatory site on the same chromatin. It is then thought that the eliciting of the response takes place at the structural site(Fig. II B).

The second model proposed is a so-called "cascade effect" model as illustrated in Fig. II C. The model supposes that the HR complex combines with a certain binding site; this binding induces formation of product "**a**"(either RNA itself or protein via pre-existing mRNA), which is an essential intermediate. This intermediate would then somehow stimulate production of

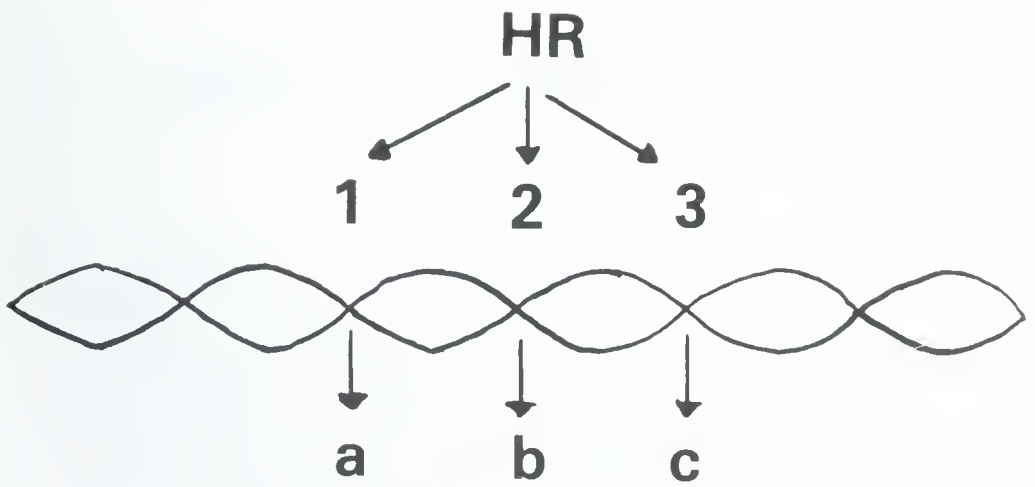


Fig II A: Simple Model

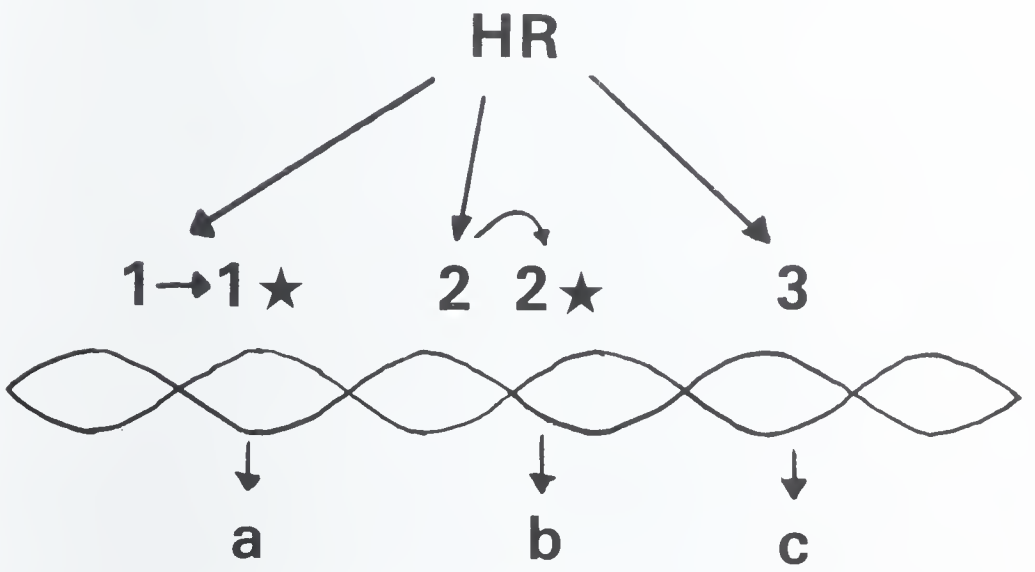


Fig II B: Simple Model with Translocation

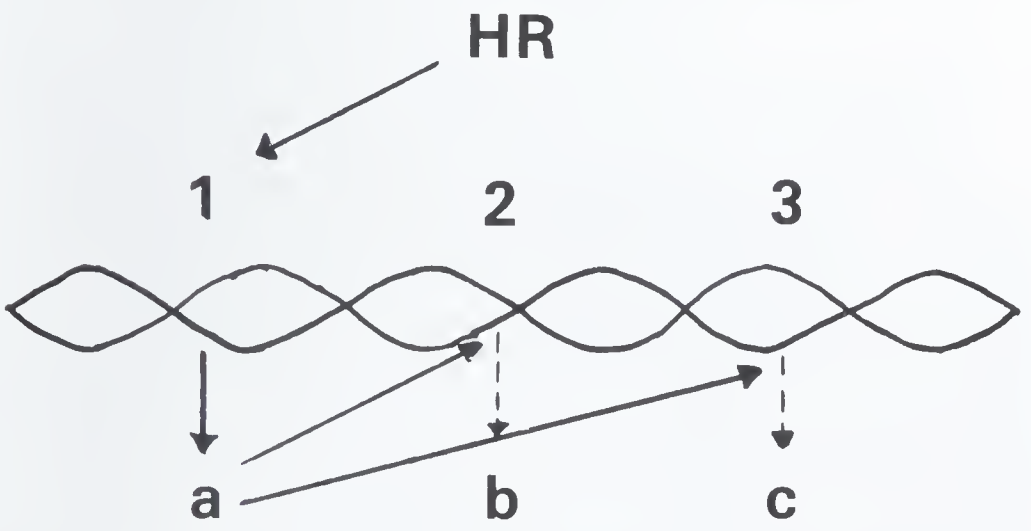


Fig II C: Cascade or Essential Intermediate Model

final products b and c, by an effect on DNA at sites 2 and 3(Fig. II C). There are problems with this model however.

It has been shown that a short time after estradiol administration(30 min.) in an *in vitro* chick oviduct system, induced protein can be detected radio-isotopically.[2] Yet the model above supposes that the HR complex would diffuse away from the receptor after doing its work; the induction would hardly be of significance if this were the case. However, estradiol does give **full** uterotropic response. This the model cannot explain. Furthermore, work with estriol, a chemical relative of estradiol, has shown that hormone-receptor complexes with the former are not retained as long in the nucleus, and full uterotropic response does not result from estriol.[3]

Thus, it would seem that a sustained occupancy of HR complex on the chromatin, as proposed by Gorski[4] is required for full uterotropic response, a condition not accounted for by the above model.

A third model that has been described(shown in Fig. II D) proposes that there are different receptors for the hormone itself, each receptor determining(in the form of a complex with the hormone) what product is elicited.* Hence in Fig. II D, HR_1, HR_2, and HR_3 are hormone receptor complexes each containing different receptor components. Each complex will combine only with a certain chromatin binding site; binding to that specific site causes the response. However, this model would require highly purified steroid receptors, in order to be substantiated. Current problems in steroid receptor purification include lability to heat, a tendency to aggregation at high salt concentrations, as well as in difficulty in removing confounding artifacts from various systems. Hence, justification of this model must await more refined receptor preparations.

Having ruled out the latter two models, albeit rather hastily for the purposes of this report, evidence for the first model will be considered.

The general technique used in examining production of proteins in chick oviducts consists first of preparing a pure mRNA for the

protein under consideration. The mRNA is incubated with reverse transcriptase, an enzyme which produces a complimentary DNA strand from an mRNA template. This complimentary DNA is separated out, and is used to measure the rate of mRNA production(for the protein under consideration), by measuring the rate of hybridization of the mRNA to the supplied complimentary DNA.[5]

Harris and co-workers[6] have done work on *in vitro* synthesis of mRNA for ovalbumin in chick oviducts which suggests that the HR complex **can** act directly on chromatin to open up the ov albumin DNA. Their data clearly presents evidence against the "essential intermediate" model(the second model discussed above).

Palmiter and co-workers[7] did work on the kinetics of ov albumin as well as conalbumin induction by estradiol and progesterone. They found that with estradiol, there was a lag in time taken for the ovalbumin synthesis as compared with conalbumin synthesis. This suggested to them that perhaps the distance between the receptor binding site for estrogen and the DNA for ovalbumin synthesis was further than the distance between the binding site for estradiol and the conalbumin DNA. Because progesterone stimulates synthesis of both proteins to an equal degree, within an equal time frame(approximately), and whereas the estradiol stimulates conalbumin synthesis to the same level in a much shorter time than progesterone, a sort of translocation for the estradiol-receptor complex along the chromatin could be envisioned. In this manner the estradiol-receptor complex, being closer to the conalbumin gene, relative to the progesterone-receptor complex, could exert more of a direct influence on conalbumin synthesis than would the progesterone. Their data, then, suggest that the incorporation of the receptor translocation hypothesis into the first model of steriod hormone-chromatin interaction discussed above might be a more realistic model to explain induced protein production due to sterioid hormone production.

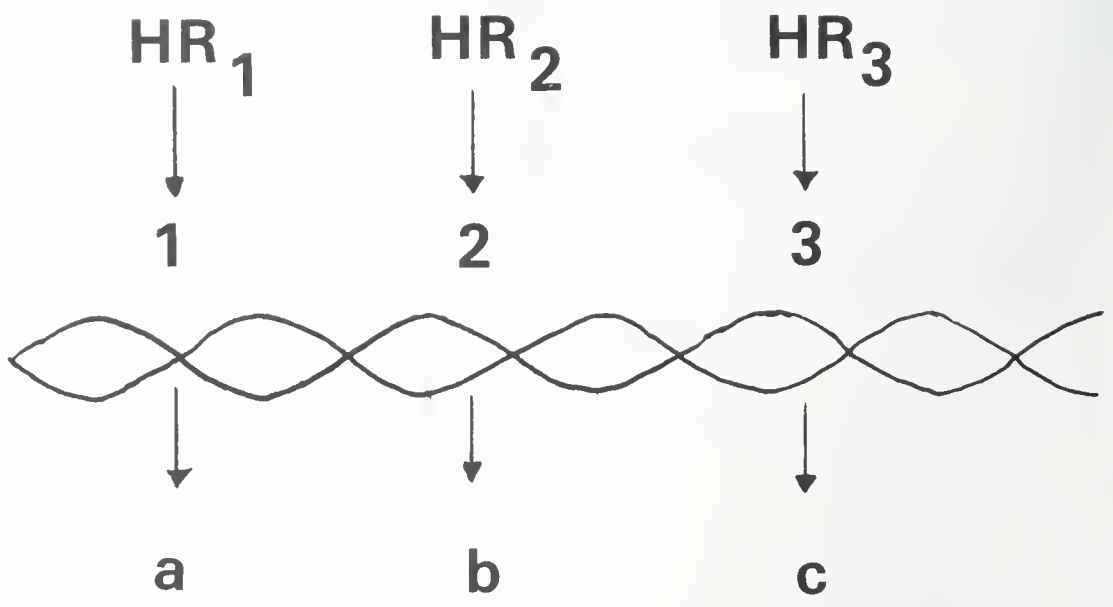


Fig II D: Different Receptor-Different Site Model

As can be seen from the above discussion, the final answers are by no means apparent. How steroid hormones do what they do in the nucleus, and thereby effect cell metabolism, remains to be elucidated. Ongoing research into steroid hormone-chromatin interaction will hopefully be able to clarify the situation in time. Understanding the estrogenic regulation of normal, as well as abnormal, growth and behavior of tissues of the reproductive tract will pave the way for a host of further research possibilities and clinical benefits. □

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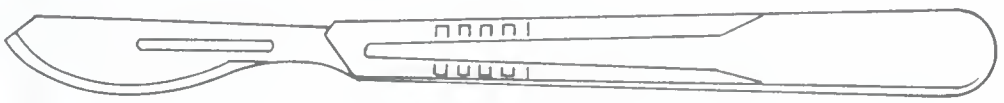
1. Lehninger, A.L.: *Biochemistry, 2nd. ed.* Worth Publishers, 1975.
2. Palmiter, R.D. et al: *Cell*; Vol. 8, p. 557, 1976.
3. Gorski, J. and Raker, B.: *Gynecologic Oncology*, 2:249, 1974.
4. Ibid.
5. Ibid.
6. Harris, S.E. et al: *J. Biol. Chem.*, 251:524, 1976.
7. Ibid.

• *These models are based on compilation from various references, some not listed here. See editor for details.*

blunt dissection



Taxpayers, via OHIP, should foot the bill for abortions

Pro

Ontario Health Insurance is the only basic health care insurance available in Ontario to Ontario residents. It includes all residents, even women. Like any insurance plan, those who benefit from the plan must first contribute to it(with a few exceptions). Conversely, those who contribute are entitled to the benefits--women are taxpayers; women support OHIP; women have the right to OHIP assistance. Those who would have us believe that abortions should not be paid for by OHIP must justify the exclusion of one particular operation, namely abortion, and the resulting discrimination toward one particular group of patients, namely women. Why should an operation required by female contributing taxpayers not be subsidized in the way that all other operatoins are? The objections to such subsidization are as varied as the personal prejudices involved.

The are certain groups, for example, Roman Catholic male priests, who may object to abortion on religious grounds. Should medical treatment be paid for entirely by an individual who already contributes to OHIP because some few other contributors don't 'believe in it'? If you agree with such a supposition, then would you also support a proposal that blood transfusions not be covered by OHIP because certain religious groups object to the procedure?

Then there are the others who belong to the "Punish Pleasure with Pregnancy" school of thought, with whom I have unfortunately come into contact. After calling me a "Nazi baby-killer", they go on to say that if a woman becomes pregnant, she deserves it. (As though conception were the result of the triumph of the will, or current methods of birth control were foolproof!). If one seriously believes this, then how does one treat other patients who are not merely victims of their biology, but have actively caused their condition? Is it consistant to refuse to termiate a woman's pregnancy because one belives she "brought it upon herself", but to approve the treatment of a lung cancer patient was a two pack-a-day smoker for twenty years?

Some would object on the basis of cost alone, but all procedures covered by OHIP involve cost. And abortion is, of course, less expensive than treatment of a pregnancy carried to term. In addition, once the child is born, the cost of the child's care to the taxpayer increases. Schooling and medical services are not the sole responsibilities of the parents. Those of slightly more mercenary temperment may even recommend abortion as a procedure which, in the long run, saves the

Con

Right now Ontario taxpayers **do** foot the bill for abortions--every last one of them! My position is simply that this is wrong, wrong, wrong. It offends my political principles as well as my moral ones.

Abortion is **not** an inherent right of women. But the human 'right to life' is just that--an irrevocable right. Certainly life before birth is no less life, yet we find this right being violated daily, massively, in the hospitals and clinics of this free and democratic continent. In Ontario, where most people pool their money in OHIP to pay for their health care, every OHIP member has no choice but to also subsidize this flagrant violation of **the** ultimate right. The alternative at present is to get out of OHIP(and suffer the financial consequences if you fall ill or injured) OR remove all but truly **therapeutic** abortions from the schedule of services reimbursable through OHIP.

Can this be done? Consider what's been happening in the U.S.. In 1973 the U.S. Supreme Court gave women the right to abortion for any reason up to 12 weeks of gestation. Federal and state Medicaid funds were granted for all those who could not afford their abortion fees. But last year Congress passed a bill eliminating all Medicaid funds for such procedures. The bill was challenged far and wide but still, last June, the Supreme Court upheld the bill in its ruling that the Government is under **no** constitutional obligation to finance abortion. A major victory for the Right-to-Lifers...a major blow to those few subthalamic feminists who, like screaming Valkyries, falsely equate anti-abortionists with anti-feminists. The decision deals a real blow, of course, to the poor. Still, if monies previously allocated for abortions were rechanneled into effective, widely available pregnancy prevention, the onus **could** be lifted.

So...can OHIP scratch abortions? Lets hope so. Removing the government's tacit approval of abortion for any reason to anyone would be a major victory in the war against this most pernicious modern mode. Afterall, the moral battle will be a long long time resolving, if ever. Until that time, I don't want to pay for the mass murder of our progeny because they cause a mother inconvenience(euphemistically dubbed 'mental duress'). Until the powers-that-be get off their cans and provide the representative leadership they promised last election, I'll just have to let my OHIP premiums lapse. (Better yet, why not abort OHIP, lock, stock, and barrel??! But that's an arguement for another day...). □

Anonymous

(continued from page 31)

Pro (continued)

taxpayers money. Abortion is in general much safer than a full term pregnancy as far as the woman's health is concerned; spaceship earth benefits too, for with an addition every day of 200,00 new mouths to feed, one would see little benefit in encouraging the increase of a population already too large for its own good.

Insofar as women are taxpayers and supporters of OHIP, they have the right to medical subsidization within the plan. Because an operation is required by only one sex and/or may worry a minority of persons who object to it for one reason or another, this is no justification for its exclusion from a comprehensive medical care program. □

Rosanne Superina

Future Dissections:

Do doctors have the right to strike?

Socialized medicine: Pie-in-the-sky disaster? or Our only hope?

Re-introduction of old-fashioned grading policies is really an acknowledgement of the failure of our Admissions Committee to do its job.

Statements of roughly 400 words, either pro or con, may be submitted at anytime to the editors, or left in the Journal Mailbox in the Medical Society Office. Because we hope you'll evaluate the convictions expressed herein, and not the people who write them, we are willing to print positions and keep the author's name confidential, if such anonymity is requested.

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Troubleshooting In Medical Offices

A.B. Gillespie, CCCE

SUMMARY

Physicians usually go into practice with little or no instruction in how to manage their business affairs or organize their offices. Many questions, such as where to practice, whether to join a group and whether to incorporate, must be answered. Several sources of help are available, but nothing substitutes for knowledge of the basic principles outlined in this article.

Mr. Gillespie, a former clinic manager, is a part-time business consultant with the British Columbia Medical Association. Reprint requests to: British Columbia Medical Association, Academy of Medicine Building, 1807 West 10th Avenue, Vancouver, B.C. V6J 2A9

In MEDICAL SCHOOL, little if any time is devoted to the business side of practice. The lack of instruction on medical office management puts the physician in a very vulnerable position-a prime target for all those who feel it their duty to give him lots of advice and at the same time try to separate him from his money.

Many of you will no doubt recall the horrendous experience of starting out on 'a wing and a prayer', having to depend upon your observations of other medical practices and the experience of your staff. Fortunately, some help is now available both for those starting out in practice and for physicians already practicing.

Practice management seminars now are available across Canada through the Canadaian Medical Association's MD Management Division. This organization also provides a manual on monthly financial planning.[1] Monthly seminars are provided in British Columbia free of charge.

Some of the questions which rnust be answered are:

1. Where should I practice?
2. Should I do some locums first?
3. Should I go into solo practice, a partnership or an associate group?
4. Is there any advantage to having my year end other than the calendar year?
5. What space do I require?
6. Should I rent or buy into a building?
7. Should I buy or lease furniture and equipment?
8. How do I go about hiring staff and how much should I pay?
9. How can I find out the newest and best methods of appointment scheduling, and filing of history charts?
10. Can I pay my wife if she works in my office?

Where Should I Practice?

This primary question is one that may well affect the rest of your life, so the answer must be well thought out. One should endeavour to find out as much as possible about such things as climate, economy of the area, whether over or under doctored, conditions under which you prefer to live, urban or rural, proximity of such services as hospitals, schools, churches, shopping and transportation and whether the area appe ars equally attractive to your spouse-if not, you are in trouble.

Should I Do Some Locums?

Unless you are fortunate enough to come up with most of the answers about where to practice, trying locums in various places is a valuable experience of living and working conditions. Practices are constantly up for sale because of the wrong decision on location. This kind of relocation is frequently very interruptive-children have to be taken out of schools, houses sold, etc., whereas locums can be set up with the idea of a move in mind.

Are You Cut Out For Group Practice?

This is a vital question. There is an interesting questionnaire[2] which could give you some ideas of how you would fit into a group; it covers such areas as your attitudes to business arrangements, group relations, etc. If you rate between 60-100, you will do well in a group

practice; between 25-59, maybe; and under 25, forget it.

Remember that the solo family physician is on 24-hour duty unless he can arrange a duty rostrum with other colleages. Special arrangements must be made for a vacation, educational courses or sick time, otherwise there will be no incomme. In group practices, there are the advantages of more time off, internal consultations and patient coverage in one's absence. The economic and legal aspects of practicing medicine in partnership must be carefully assessed *before* making a decision.[3]

Tax Year End

There is considerable advantage in tax deferment by having your year end at January 31 instead of December 31. For example, should you start a practice sometime during 1977 and arrange your year end for December 31, 1977, your deadline for paying income taxes would be April 1978. Should your tax year end on January 31, 1978, you would not have to pay income taxes for your first year until 1979. Over a period of the first five or six years in practice this would become a substantial amount of tax deferment. If you are already in practice your year end can be changed, if warranted by such events as taking in a new partner, but you cannot keep juggling the year end around.

What Space Do I Require?

In family practice most doctors spend six or more hours each working day in their offices. There is a wide-spread differential between the number of examining rooms used by family physicians, varying from one to four or more. Although some seem to manage quite well with one examining room, in my opinion they are restricting efficiency by having to wait between patients for cleaning of the room and for patients dressing and undressing. The majority use a consulting room(or office) and two examining rooms, but the really busy doctor works most efficiently with an office and three examining rooms, provided that he has good help in readying his patients for examination. In this way, the doctor can move back and forth without rushing or being frustrated through having to wait. With three examining rooms a well-trained assistant can more than pay her wages by enabling the doctor to make best use of his time.

Examining rooms should be no less than eight feet by ten feet with the table on the long wall; provide waiting room space for about one and a half times the number of patients you would see in an hour. If you allow for adequate reception area, a toilet, small laboratory, storage room, a consultation room, three examining rooms and a four foot wide hall, you are looking at approximately 700 square feet(inside measurement). Carpets throughout(except in toilets and lab) are a good investment since they cut down on noise and are easier to maintain than tiled floors(see Fig. 1).

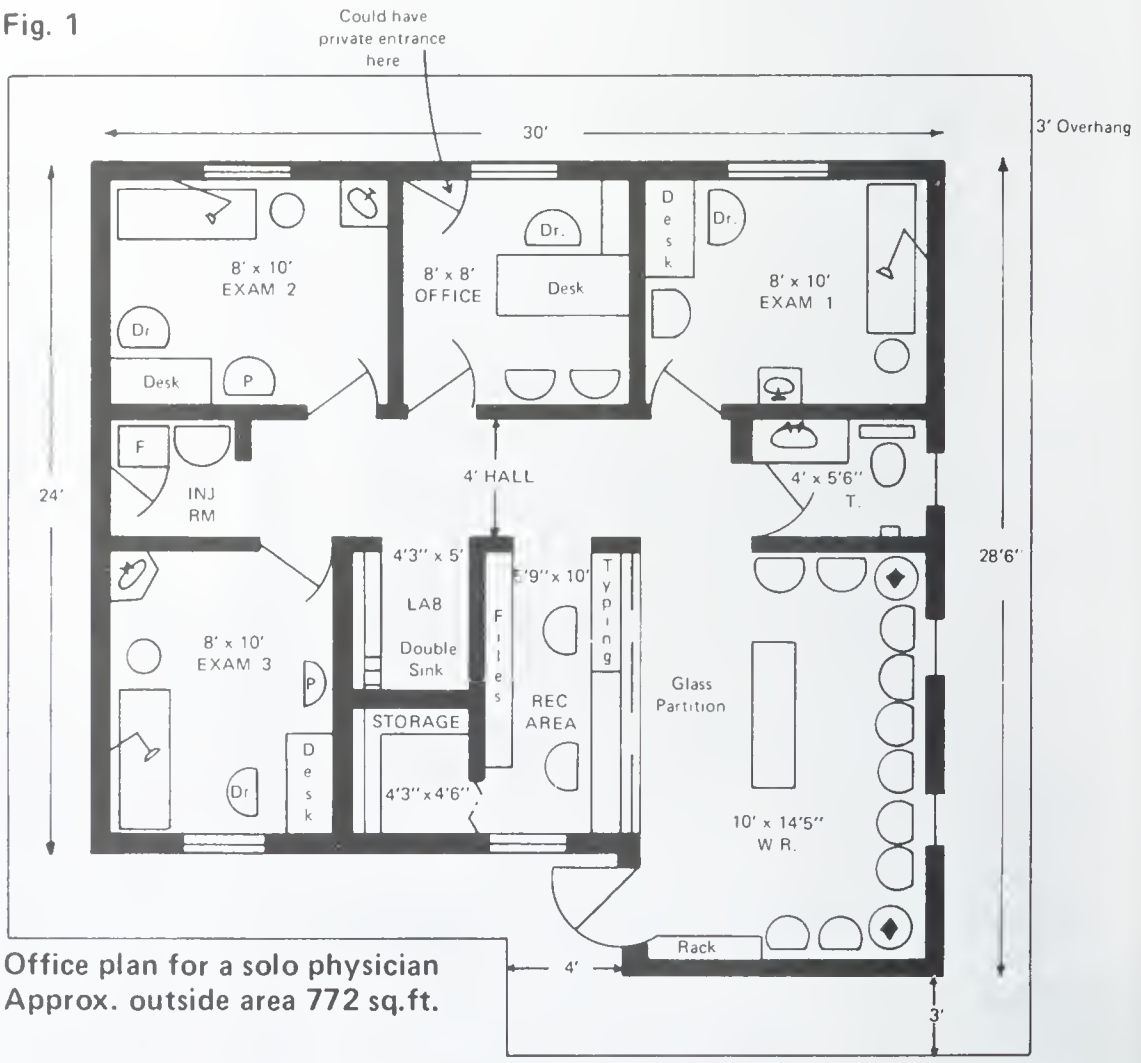
Should I Buy or Rent?

Circumstances will, of course, affect your judgement on this question. If you rent, try to secure a three or five year lease. Fisrt find out first how far your landlord will go on alterations, painting, carpeting or decorating. If you buy into a building be sure that the location is right for you and have your lawyer look carefully into the contract. If you intend to build, allow for future expansion and if you intend to rent out parts of the building, make sure your prospective tenants sign on the dotted line before you put the spade into the ground. Buildings can be the best investment you ever make.

Equipment: Buy or Lease?

When starting up in practice most doctors' finances are not the best and a two or three year leasing contract with option to purchase might be the most advantageous. The full lease amounts can be written off and no capital is required. Occasionally,

Fig. 1



Office plan for a solo physician
Approx. outside area 772 sq.ft.

technical improvements occur during the lease period and the older model can be replaced by the new one under an exchange agreement. Since leasing companies are in business to make money, the acquisition will cost more in the long run. What you are paying for is the convenience of not having to put out the money at the beginning.

What About Staff?

1. Contact Canada Manpower and give a job description.
2. Put an attention-getting advertisement in your most read newspaper using a box number for replies.
3. Put a notice in the doctor's lounge in the hospital.
4. Contact medical office assistants, if any, in your area.
5. Vocational institutes usually have courses for medical office assistants.
6. Find out what other jobs are paying for similar types of work in your area, i.e. hospitals, governments, banks, lawyers,accountants. Make your office a desirable place to work, taking into account environment, wages, employee benefits and appreciation for jobs well done.

The Appointment Schedule

A good appointment system must contain time intervals suitable for the doctor and geared to the speed at which he likes to work. If a doctor sees around 35 patients per day and works an average of six hours in his office, he needs a 10-minute unit system, not 15. Conversely, if he sees an average of four patients an hour there is no point in booking for six.

Making appointments is very time consuming; most of this time is spent continuously turning pages in order to find a suitable available period. Mardan Business Systems [4] have developed a color-coded appointment book which enables the receptionist to see a week's appointments at a glance. Books are available for solo or group practice. The key to successful use of this method lies in crossing off the time slot as each appointment is made. This system is inexpensive and is a great time saver. For five or more doctors using a central appointment booking system, the Visirecord Systems Company[5] has a system which allows instant scanning of available schedules for up to a month in advance without having to turn pages. This method is being successfully used in many clinics.

One of the receptionist's most difficult problems is working in additional patients. This subject deserves an article itself and has been covered previously.[7]

Filing of History Charts

Many changes have taken place in the method of housing and handling patients' charts, having progressesd from the 5 x 8 inch cards into the 8½ x 11 inch paper world. Most offices now use the 8½ x 11 inch folder to contain all information; some are family charts, some individual; some alphabetical, some numerical; some color coded and some not. They are housed in cabinet pull-out drawers, roll-out drawers or open-shelf filing.

A good filing systems should allow quick and accurate withdrawal and re-filing of records; the outside of the folder should show whether the record is active or inactive, and there should be a method of preventing misfiling.

A method which of filing history charts which accomplishes not only the requirements mentioned above but saves space , time, and hss proven to be the most successful system for medical offices, is known as the alpha-code, developed by Tab Products of Canada in 1965.[6] Their space finder cabinet holds twice as much information in half the space of drawer cabinets or roll-outs. Easy accessibility, in addition to the alphabetical color coding, prevents misfiling. The need for a cross index of patients' clinic numbers is eliminated, thereby saving the cost of the cross index containers or wheels and up to 40 percent in time.

I favour the individual charts because they are less bulky, better suited for color coding, faster to pull and refile. They eliminate the need for stapling as is necessary in family charts. In addition, the individual charts speed up the filing of reports and correspondence and allow for charts of family members seen only occasionally to be filed in the inactive area, leaving more filing space for active charts.

Can I Pay My Spouse?

This question arises frequently and the answer is no. Should you incorporate(in provinces where this is permissible), the company can employ your spouse. In provinces such as B.C. where, at present, physicians cannot incorporate, a management company can be formed and wages paid to the spouse by the management company.

The main advantage in forming a management company is that by having the spouse own company shares, he or she may derive the profits. The spouse working in the office or actively employed by the management company can also be paid a salary. The big saving is in income splitting, not in tax deferment, unless it is defererd over a period of several years.

If a management company is being considered, there are certain steps one must take:
1. Select a good tax lawyer
2. Select a company name
3. Select a share structure
4. Incorporate the company
5. Name directors and officers
6. Draw up banking resolutions and open a company bank account
7. Draw up an employment contract if the spouse is to be employed
8. Write a management agreement
9. Obtain tax deduction tables at source for employees(CPP, UIC, etc.)
10. Set up ledger accounts
11. Obtain city licence
12. Obtain stationery and account forms
13. Change lease(if any)
14. Place company name somewhere on the premises
15. Change insurance, if necessary
16. Transfer assets to name of company(in some cases)

(continued on page 37)

Newswatch

Did you know that in Autumn '76 the French-Language Health Services Task Force published the results of a year long study of the effects of language on the quality of health services provided to French speaking citizens of Ontario? The Task Force, commissioned in February, 1975 by the Lieutenant Governor, worked through hundreds of questionnaires, interviews, and public hearings. Their findings consummated a Slap on the Collective Wrist of the provincial health authorities for their acute aperception of the problems minority language groups encounter in the search for quality health care. Among the more interesting findings are: 6.3% of Ontarians list French as their first language. Most of these people live in the North and East. General hospitals, and facilities for the handicapped are everywhere lacking in French language services, but the situation is **most** serious in provincial psychiatric hospitals, where Francophones must endure a "total immersion course in English" on top of their struggles with their assorted neuroses, psychoses, etc. Government financial assistance is given to health agencies without considering the language of the population being serviced, even in areas that are nearly 100% French speaking. Doctors are recruited for Underserviced Areas without even enquiring about the languages(if any!) these professionals are able to use in communication with their patients. Because the most serious impediment to the availability of services to Franco-Ontarians is the simple shortage of persons who can provide services and care in French, the Force recommended that graduates of French language high schools be given easier access to the health field. It suggested that we should recruit as many Francophones as possible from outside the province, **and** ensure that young people from areas where there is a significantly large French-speaking population who will join the health professions understand that they will **not** be providing the highest quality of care **unless** they do so in French to Francophones. The number of Francophones accepted to the Faculties of Medicine in 1975 was 26, 24 of whom were accepted in the University of Ottawa. There were 167 applications in Ottawa, 48 at McMaster, 42 at Queen's, 40 at Toronto, and 30 at Western(181 French-speaking candidates altogether). Besides the 24 accepted at Ottawa, one at Kingston and one at Toronto give the total acceptances. Since we(the Force) cannot count on the Faculties at Toronto, Hamilton, or London for the training of Francophone professionals(each university received between 1500 and 1800 applications), we(the Force) recommend that the Faculty of Medicine of Ottawa University transform into a completely bilingual school. We(the Force) further recommend that at least 15 qualified Franco-Ontarians be admitted to the Faculties of Medicine in Quebec, for the next ten years, subject to renewal. Also, a French-language Faculty of Medicine should be established in Ontario(at Ottawa or Sudbury) for minorities outside of Quebec. Without wading through all of the over 100 recommendations made to the Ministry of Health, suffice it to say that the Force wants to make one point overall perfectly clear: A French-speaking, French-cultured person must be chosen to coordinate the various programmes formulated by the Force, because **"someone who does not live in French cannot imagine how serious the problem is...let alone find solutions."** Take heed, out there,(and may the Force be with you!)

From Pas de Probleme, Rapport du Comite d'action sur les Services de Sante en Langue Francais, 1976.

Did you know that OHIP discriminates against psychologists? So says Douglas Quirk, head of thee section on Clinical Psychology for the Ontario Psychological Association. Psychiatrists as well as doctors are covered by OHIP but are plagued by long waiting lists, sometimes six months long says Mr. Quirk. Meanwhile, psychologists are a professional body that are relatively unused because their services are not covered by OHIP.

The Executive Director of the Elizabeth Fry Society, Ms. Haslem, supports Quirk's view by saying "The whole question of OHIP should apply to **all** professionals who work with ill people. In many instances mental and physical health depends on social workers and psychologists as well as doctors and therefore should receive OHIP as it is a recognition of the effectiveness of their role."

Last year OHIP spent $742,487,948 on fees for general practitioners. Dr. Arthur Leonoff, president of the Academy of Psychology of Ottawa says "30 to 40% of all people seen in family medical settings are present with either psycological or psychosomatic problems." According to these figures, over $220 milllion dollars was spent on psychological services done by Ontario general practitioners in 1976, practitioners whose training in such problems has been minimal at best.

Meanwhile, the Ontario Psychological Association Legislation Committee has been working on legislation governing the practice of psychology in Ontario. Their proposal is currently with the Ministry of Health, Ontario. At this time consideration also **should** be given by the Ontario Government to providing OHIP coverage for psychological services provide by psychologists. Will it?

Glyn Jones

Book Reviews

The Stress of My Life
Hans Selye
McClelland & Stewart
April 1977
$10.00

The Stress of My Life is a distressing little autobiography by 67 year old Montreal scientist Dr. Hans Selye. This latest work exaggerates the unpleasant, boastful quality hinted at in his now famous earlier work, *The Stress of Life*(1956). The disharmony of false modesty juxtaposed with baldfaced self-esteem serves only to distract the reader from the real meat of Dr. Selye's true accomplishments. When he stops telling us about his personal virtues and get on to tell us what he actually did as Founder and Director of the Institute of Experimental Medicine and Surgery at the University of Montreal, the book improves. But not enough to make it worthwhile reading. Dr. Selye seems unaware that inhibition is the mother of good taste, and the result is a boring and at times insufferable apologia.

Diet Manual
compiled by the Ontario Dietetic Association
published by the Ontario Hospital Association
June 1977
approximately $8.00

This is the latest edition of the dietary reference now widely used throughout Ontario and across the country. And little wonder at its success. It is convenient both in its basic construction(small plastic covered binder style) and in its content, which incorporates the latest trends in diet therapy. A glance at the Table of Contents reveals the topics covered: the recommended daily nutrient intakes for normal healthy adults and children, as well as pregnant and lactating women; standard hospital diets; therapeutic diets for diabetics; controlled kilojoule diets; controlled fat diets; restricted sodium diets, special diets for biliary tract disease, hepatic disease, and renal disease; restricted protein diets; diets modified in fibre and residue; diets for post-gastrectomy and other gastric disorders; restricted lactose and gluten diets; special sections on PKU, food allergies, food and drug relationships, test diets, tube feedings, and nutritional support of cancer patients and alcohol and drug dependent patients.

Overall, it is a flexible, up-to-date guide for physicians, dietiticians, nurses, medical students, and food service personnel in hospitals and related fields that comes highly recommended by this reviewer. Requests for manuals, discharge diet sheets, product information, recipies, and other materials as noted throughout the Manual, should be directed to the Dietetic Services of the Ontario Hospital Association, 150 Ferrand Drive, Don Mills, Ontario, M3C 1H6.

S. Ross

(continued from page 35)

Examine Business Practice Carefully

Some further questions a doctor might ask himself are:
Do the staff I have work efficiently?
Have I provided up-to-date office equipment?
What are the characteristics of the position and the qualifications required for each category?
Can I use part-time help?
Have I instituted an efficient flow of work in my practice?
Do I use a systematic method of billing and recording my receipts, accounts payable and all other records required for income tax purposes?

These questions need constant attention if a streamlined flow of work is to be maintained. The cost of medical supplies can, in some cases, be recovered from the patient; for example, dressings bandages, tray services, some serums. Family physicians spend an average of $1,000 a year on medical supplies, so their purchase deserves close scrutiny. □

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GILLESPIE,A.B.: Troubleshooting in Medical Offices. CANADIAN FAMILY PHYSICIAN 23:814-816, 1977. Reprinted by permission of the publisher.

FEEDBACK

We are happy to report that in November issue, 80% of back on the number of issues 20% didn't care, and virtually 0% representative comments follow:

response to the insert in our respondents disapproved of cutting published each year. The remaining approved of the proposition. Some

I thoroughly enjoy the Journal. Let's get our priorities straight. Compare the number of people who will benefit by the Camera Club's gigantic budget increase with those who will suffer by a reduction in the quality or frequency of issues of the Journal. The Journal reaches more students, alumni, and faculty members than any of the other organizations that hang around this building.

Frank Liste 8T1

I disapprove(of cutting back)--in fact, there should be a greater call for student participation here. Especially valuable would be those who have research and publication experience.

Name witheld

Does the cost per issue per student warrant five issues a year? One can more likely obtain a greater volume of informative reading material at no greater cost by subscribing to a renowned medical magazine.

Name witheld

I find the Journal a very interesting and worthwhile venture. It gives students an opportunity to express themselves scientifically and the readers an opportunity to read understandable articles. I think that students who have done work in labs over the summer, especially over a series of summers, should be encouraged to a greater extent to present their work in the Journal, as Jay Wortsman has done in the November issue.
Regarding the proposal(to cut back), if having five issues means putting out a poor quality Journal, and having, say, three issues would substantially improve the standards, then it makes sense economically and readership-wise to limit the number of issues.

Name witheld

I enjoy this medical journal very much and I feel it gives us unexposed 'dummies' a chance to read what's going on and see how our fellow colleagues can write. The Journal also gives those amongst us who are writers a chance to express their talent.

Name witheld

I disapprove(of cutting back). The Journal is a very GOOD thing!

I.S.

The Journal is a good opportunity for us to voice our opinions **or** for some of us to publish medical articles that would probably not be printed in the other medical journals(OMA, etc.). It's simple and well done.

Name witheld

The only other alternative is to increase the volume of each Journal if there are to be less issues during the year. This, I feel, would be fine.

Name witheld

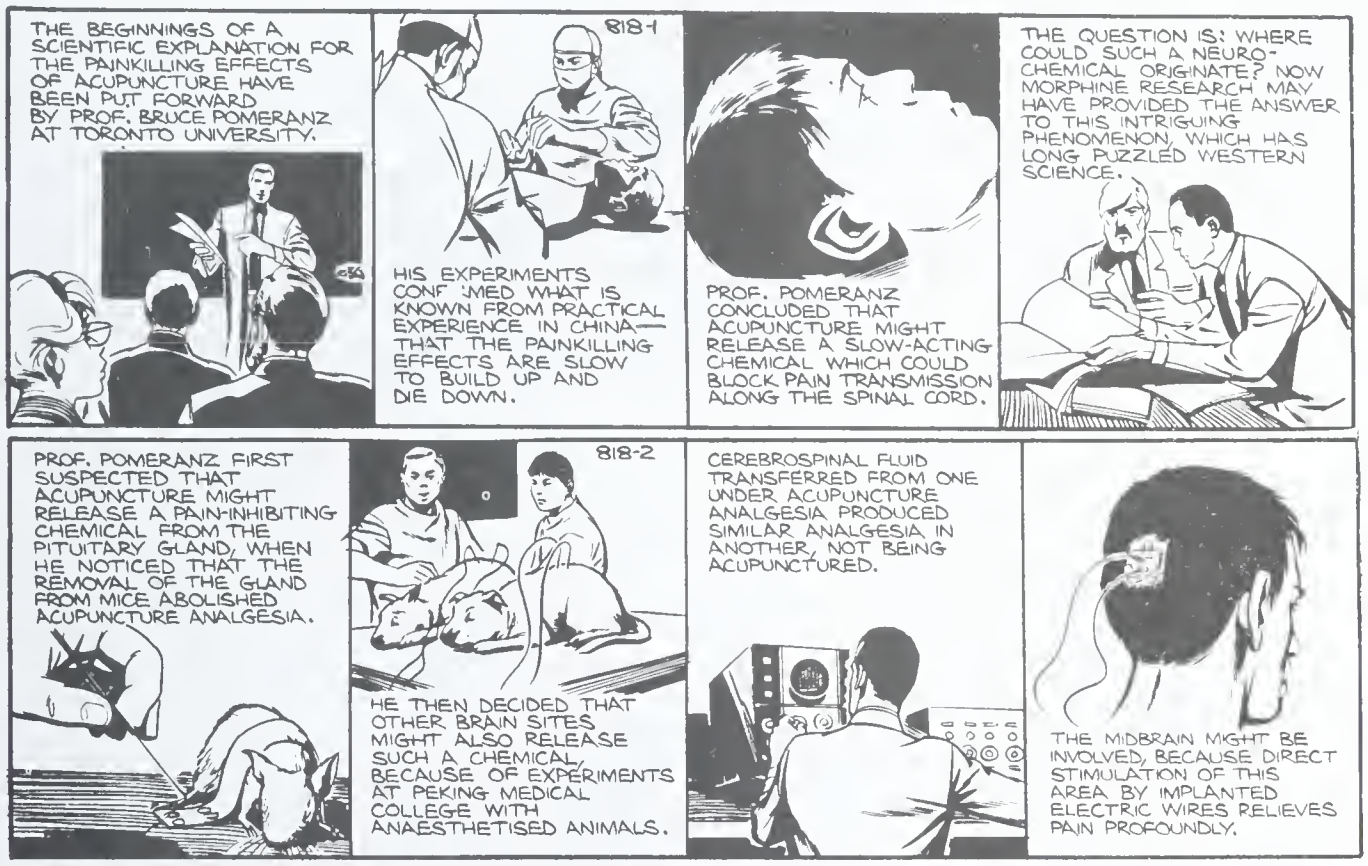
Although medical school is a time consuming and tension filled lifestyle(therefore leading to the extracurricular 'social' emphasis), it is still **primarily** an academic institution.
A journal of a medical school not only gives members of the school the opportunity to have their work published, it also gives their classmates the exposure to current 'hot' areas of research and medical controversy. The role of the Journal is an important one which should **not** be diminished in the University of Toronto.

Alan Fegelman 8T1

The editors wish to thank all those who let their views be known.

And finally, our South Seas correspondent, who prefers anonymity to fame(or notoriety) has sent us this reprint from the *Tribune*, Nassau, Bahamas, June 11, 1977. Although *Endomorphins for the Masses* or *Neuroendocrinology Made Easy* may be more appropriate titles, we congratulate the *Tribune* for its unique attempt to acquaint the public with Science!

FRONTIERS OF SCIENCE **This Week: Brain Opiates and Acupuncture — Part 1**


THE BEGINNINGS OF A SCIENTIFIC EXPLANATION FOR THE PAINKILLING EFFECTS OF ACUPUNCTURE HAVE BEEN PUT FORWARD BY PROF. BRUCE POMERANZ AT TORONTO UNIVERSITY.
818-1
HIS EXPERIMENTS CONF MED WHAT IS KNOWN FROM PRACTICAL EXPERIENCE IN CHINA— THAT THE PAINKILLING EFFECTS ARE SLOW TO BUILD UP AND DIE DOWN.
PROF. POMERANZ CONCLUDED THAT ACUPUNCTURE MIGHT RELEASE A SLOW-ACTING CHEMICAL WHICH COULD BLOCK PAIN TRANSMISSION ALONG THE SPINAL CORD.
THE QUESTION IS: WHERE COULD SUCH A NEURO-CHEMICAL ORIGINATE? NOW MORPHINE RESEARCH MAY HAVE PROVIDED THE ANSWER TO THIS INTRIGUING PHENOMENON, WHICH HAS LONG PUZZLED WESTERN SCIENCE.
PROF. POMERANZ FIRST SUSPECTED THAT ACUPUNCTURE MIGHT RELEASE A PAIN-INHIBITING CHEMICAL FROM THE PITUITARY GLAND, WHEN HE NOTICED THAT THE REMOVAL OF THE GLAND FROM MICE ABOLISHED ACUPUNCTURE ANALGESIA.
818-2
HE THEN DECIDED THAT OTHER BRAIN SITES MIGHT ALSO RELEASE SUCH A CHEMICAL, BECAUSE OF EXPERIMENTS AT PEKING MEDICAL COLLEGE WITH ANAESTHETISED ANIMALS.
CEREBROSPINAL FLUID TRANSFERRED FROM ONE UNDER ACUPUNCTURE ANALGESIA PRODUCED SIMILAR ANALGESIA IN ANOTHER, NOT BEING ACUPUNCTURED.
THE MIDBRAIN MIGHT BE INVOLVED, BECAUSE DIRECT STIMULATION OF THIS AREA BY IMPLANTED ELECTRIC WIRES RELIEVES PAIN PROFOUNDLY.

THE REAL IMPETUS TO PROF. POMERANZ'S THEORY ABOUT THE NEUROCHEMICAL BASIS OF ACUPUNCTURE CAME FROM THE SIMULTANEOUS DISCOVERY IN THE U.S., U.K., AND SWEDEN OF BRAIN CHEMICALS WHICH MIMIC THE EFFECTS OF MORPHINE.
PITUATARY GLAND
MIDBRAIN
THESE CHEMICALS— CALLED ENDOMORPHINS— PREVENT PAIN BEING FELT, JUST AS MORPHINE DOES—AND THEY ARE FOUND IN THE PITUITARY GLAND AND THE MIDBRAIN.
PROF. POMERANZ NOW SUGGESTS THAT ACUPUNCTURE RELEASES ENDOMORPHINS IN THESE AREAS, TO REDUCE PAIN JUST AS BY AN INJECTION OF MORPHINE.
HE CONFIRMED THIS BY INJECTING MICE WITH NALOXONE, A MORPHINE-BLOCKING DRUG. IT ALSO PREVENTED ACUPUNCTURE FROM PRODUCING ANALGESIA.
818-3
FURTHER CONFIRMATION FOR PROF. POMERANZ'S NEUROCHEMICAL THEORY OF ACUPUNCTURE CAME WITH INDEPENDENT DISCOVERIES THAT THE BRAIN'S OWN OPIATES (ENDOMORPHINS) BLOCKED ELECTRICAL SIGNALS IN THE SPINAL CORD.
NERVE SIGNALS
BLOCKING EFFECT OF ENDOMORPHINS
THIS COULD EXPLAIN HIS TEAM'S DISCOVERY THAT ACUPUNCTURE REDUCES THE TRANSMISSION OF PAIN SIGNALS ALONG THE SPINAL CORD TO THE BRAIN.
818-4
HIS TEAM IS NOW MEASURING THE LEVELS OF ENDOMORPHINS IN THE MIDBRAIN AND PITUITARY GLANDS OF ANIMALS TO SEE IF ACUPUNCTURE RAISES THESE LEVELS.
IF THIS IS PROVED, IT WOULD GO A LONG WAY TO EXPLAINING THE MYSTERIOUS WAY IN WHICH ACUPUNCTURE WORKS TO CONTROL PAIN SUCH AS ACUTE MIGRAINE...
BRUCE POMERANZ, PROF. OF NEUROBIOLOGY AT TORONTO UNI., NOW PROPOSES A SCIENTIFIC HYPOTHESIS FOR ACUPUNCTURE ANALGESIA (WHICH OF COURSE REQUIRES FURTHER RESEARCH).
NEEDLING ACTIVATES DEEP SENSORY NERVES WHICH CAUSE THE MIDBRAIN AND PITUITARY GLAND TO RELEASE ENDOMORPHINS (MORPHINE-LIKE CHEMICALS).
THESE ENDOMORPHINS, AFTER ABOUT 20 MINS., BLOCK PAIN SIGNALS PASSING ALONG THE SPINAL CORD TO THE HIGHER PAIN CENTRES IN THE BRAIN.
818-5
IF PROVED, THIS THEORY COULD MAKE ACUPUNCTURE MORE COMPATIBLE WITH WESTERN MEDICINE— AND RELEASE MANY MORE PEOPLE FROM THE RISKS OF POTENT ANAESTHETICS...